

Compulsory modules Medical Life Sciences

mlsMedCompact-01a		Basics of medical science and terminology						
In which semester	Duration			Status	Admission requirements	Credit points/workload in hrs		
1st +2nd semester	2 semesters			Comp.		6/ 180		
Component	Type of instruction	Contact hrs	CP¹	Status	Type of examination	Evaluation	Weight	
Human biology for molecular disease research (1st semester)	Lecture with practical*	4	3	Comp.	Multi-part exam part 1: Oral exam	graded	50 %	
Pharmacology (2nd semester)	Lecture	3	3	Comp.	Multi-part exam part 2: Written exam		50%	
mlsIntroMed-01a		Clinical manifestations of diseases and cell biology for clinical research						
In which semester	Duration			Status	Admission requirements	Credit points/workload in hrs		
1st semester	1 semester			Comp.		6/ 180		
Component	Type of instruction	Contact hrs	CP	Status	Type of examination	Evaluation	Weight	
Cell biology for clinical research	Lecture	2	2	Comp.	Multi-part exam part 1: Oral exam	graded	50%	
	Seminar	1	1	Comp.				
Basics of clinical manifestations of diseases	Lecture	2	2	Comp.	Multi-part exam part 2: Written exam		50%	
Diagnostics lab	Tutorial*	1	1	Comp.				
mlsMolBio-01a		Basics of molecular research						
In which semester	Duration			Status	Admission requirements	Credit points/workload		
1st semester	1 semester			Comp.		8/ 240		
Component	Type of instruction	Contact hrs	CP	Status	Type of examination	Evaluation	Weight	
Basics of molecular biology	Lecture	3	2	Comp.	Written exam	passed		
	Tutorial	1	1	Comp.				
	Practical course*	5	5	Comp.	Interviews at start/end of lab sessions (combined exam)			
mlsMolPatholImmu-01a		Pathology + Immunology						
In which semester	Duration			Status	Admission requirements	Credit points/workload in hrs		
1st +2nd semester	2 semesters			Comp.		8/ 240		
Component	Type of instruction	Contact hrs	CP	Status	Type of examination	Evaluation	Weight	
Introduction to immunology (1st sem.)	Lecture	2	1	Comp.	Oral exam (2nd sem.)	graded		
Introduction to molecular immunology (2nd sem.)	Lecture	2	1	Comp.				
Basics of pathology (1st sem.)	Lecture	3	3	Comp.				
Molecular pathology (2nd sem.)	Lecture	1	1	Comp.				
	Seminar	1	2	Comp.				

* Classes with mandatory attendance

mIsScience Method-01a		Methodology of scientific research						
In which semester	Duration			Status	Admission requirements	Credit points/workload in hrs		
1st semester	1 semester			Comp.		6/ 180		
Component	Type of instruction	Contact hrs	CP	Status	Type of examination	Evaluation	Weight	
Systems biology	Tutorial	2	1	Comp.	Written assignments during semester	passed		
	Lecture	1	1					
Introduction to medical statistics and evidence-based medicine	Lecture	2	2	Comp.	Written exam			
	Tutorial	1	2	Comp.				
mIsSoftSkills-01a		Skills for scientific research						
In which semester	Duration			Status	Admission requirements	Credit points/workload in hrs		
1st semester	1 semester			Comp.		3/ 90		
Component	Type of instruction	Contact hrs	CP	Status	Type of examination	Evaluation	Weight	
Orientation course: Studies and career	Seminar	2	2	Comp.	-	passed		
Career Day: Molecular biology as a career	Workshop*	2	1	Comp.	-			
mIsProjects-01a		Project planning						
In which semester	Duration			Status	Admission requirements	Credit points/workload in hrs		
3rd sem.	2 semesters			Comp.	Active preparation of block seminar	3/ 90		
Component	Type of instruction	Contact hrs	CP	Status	Type of examination	Evaluation	Weight	
Project planning and management	Seminar	2	2	Comp.	Oral presentation project proposal in teamwork	passed		
	Self-managed teamwork	1	1	Comp.				
mIsGenetics-01a		Human genetics/Scientific studies in medical research						
In which semester	Duration			Status	Admission requirements	Credit points/workload in hrs		
2nd + 3rd semester	1 semester			Comp.		5/ 150		
Component	Type of instruction	Contact hrs	CP	Status	Type of examination	Evaluation	Weight	
Designing and realizing scientific studies (2 nd sem.)	Lecture	1	1	Comp.	Multi-part exam part 1: Oral presentation	graded	50%	
	Seminar	1	1	Comp.				
Basics of human genetics (3rd sem.)	Lecture	2	2	Comp.	Multi-part exam part 2: Written tests for practical parts during semester (3-4; combined exam)		50%	
	Practical*	1	1	Comp.				

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mlsWritEng-01a		English scientific writing						
In which semester	Duration			Status	Admission requirements	Credit points/workload in hrs		
2nd + 3rd semester	2 semesters			Comp.		6/ 180		
Component	Type of instruction	Contact hrs	CP	Status	Type of examination	Evaluation	Weight	
English Scientific Writing: Introduction (2 nd sem.)	Seminar	1	1	Comp.	Essay writing as homework (combined exam)	passed		
	Tutorial	1	1	Comp.				
English Scientific Writing/Presentation Techniques: Advanced skills (3 rd sem.)	Seminar	2	2	Comp.				
	Tutorial	1	2	Comp.				
mlsBioInfo-01a		Bioinformatics						
In which semester	Duration			Status	Admission requirements	Credit points/workload in hrs		
2nd semester	1 semester			Comp.		5/ 150		
Component	Type of instruction	Contact hrs	CP	Status	Type of examination	Evaluation	Weight	
Bioinformatics – basics and application	Lecture	2	2	Comp.	Written exam	graded		
	Tutorial	2	2	Comp.				
	Seminar	1	1	Comp.				
mlsTechno-02a		New technologies in biomedical research						
In which semester	Duration			Status	Admission requirements	Credit points/workload [here: 1 CP = 25 h]		
3rd semester	1 semester			Comp.		4/ 100		
Component	Type of instruction	Contact hrs	CP	Status	Type of examination	Evaluation	Weight	
New technologies in biomedical research	Excursions/tutorial *	2 3	3	Comp.	Presentation	graded		
	Seminar*	1	1	Comp.				

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Electives outside focus areas (choose one)

mlsImaging-01a	Imaging techniques in biomedicine and translational research approaches						
In which semester	Duration			Status	Admission requirements	Credit points/workload in hrs	
2nd+3rd semester	2 semesters			Elec.-comp.		8/240	
Component	Type of instruction	Contact hrs	CP	Status	Type of examination	Evaluation	Weight
Medical imaging: Diagnostics (2nd Sem.)	Lecture	1	1	Comp.	Oral exam	graded	
	Seminar*	1	2	Comp.			
Medical imaging: Biomedical research (3rd Sem.)	Lecture	1	1	Comp.			
	Seminar*	2	2	Comp.			
Cardiovascular epidemiology <i>or</i> Regenerative medicine <i>or</i> Neurosciences <i>or</i> Barrier functions: Molecular interaction Epithelium – environment <i>or</i> Molecular diagnostics <i>or</i> Metabolomics (3rd sem.)	Lecture	1	1	Comp.			
Cardiovascular epidemiology <i>or</i> Regenerative medicine <i>or</i> Neurosciences <i>or</i> Barrier functions: Molecular interaction Epithelium – environment <i>or</i> Molecular diagnostics <i>or</i> Metabolomics (3rd sem.)	Lab seminar*	2	1	Comp.			

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mIsDiseaseTrace-01a		Tracing disease through time and translational research approaches									
In which semester	Duration			Status	Admission requirements	Credit points/workload in hrs					
2nd+3rd semester	2 semesters			Elec.-comp.		8/240					
Component	Type of instruction	Contact hrs	CP	Status	Type of examination	Evaluation	Weight				
Tracing disease through time (2 nd sem.)	Lecture	2	2	Comp.	Oral exam	graded					
	Seminar*	1	1	Comp.							
Tracing disease through time (3 rd sem.)	Lecture	1	1	Comp.							
	Seminar*	2	2	Comp.							
Cardiovascular epidemiology <i>or</i> Regenerative medicine <i>or</i> Neurosciences <i>or</i> Barrier functions: Molecular interaction Epithelium – environment <i>or</i> Molecular diagnostics <i>or</i> Metabolomics (3rd sem.)	Lecture	1	1	Comp.							
Cardiovascular epidemiology <i>or</i> Regenerative medicine <i>or</i> Neurosciences <i>or</i> Barrier functions: Molecular interaction Epithelium – environment <i>or</i> Molecular diagnostics <i>or</i> Metabolomics (3rd sem.)	Lab seminar*	2	1	Comp.							
mIsMolOcular-01a		Inflammatory and degenerative diseases of the eye and Translational Research Approaches									
In which semester	Duration			Status				Admission requirements	Credit points/workload in hrs		
2nd+3rd semester	2 semesters			Elec.-comp.		8/240					
Component	Type of instruction	Contact hrs	CP	Status	Type of examination	Evaluation	Weight				
Inflammatory and degenerative diseases of the eye (2 nd sem.)	Lecture	2	2	Comp.	Oral exam	graded					
	Seminar*	1	1	Comp.							
Inflammatory and degenerative diseases of the eye (3 rd sem.)	Lecture	1	1	Comp.							
	Seminar*	2	2	Comp.							
Cardiovascular epidemiology <i>or</i> Regenerative medicine <i>or</i> Neurosciences <i>or</i> Barrier functions: Molecular interaction Epithelium – environment <i>or</i> Molecular diagnostics <i>or</i> Metabolomics (3rd sem.)	Lecture	1	1	Comp.							
Cardiovascular epidemiology <i>or</i> Regenerative medicine <i>or</i> Neurosciences <i>or</i> Barrier functions: Molecular interaction Epithelium – environment <i>or</i> Molecular diagnostics <i>or</i> Metabolomics (3rd sem.)	Lab seminar*	2	1	Comp.							

* Classes with mandatory attendance

Focus areas I (choose one)

mIsInflammationI-01a		Focus area Inflammation I						
In which semester	Duration			Status	Admission requirements	Credit points/workload in hrs		
2nd semester	1 semester			Elec.-comp.	MolBio passed	5/ 150		
Component	Type of instruction	Contact hrs	CP	Status	Type of examination	Evaluation	Weight	
Introduction to clinical inflammation research	Lecture	2	1	Comp.	Written exam	graded		
	Seminar*	2	2	Comp.				
Practical disease research: Diagnostics	Practical exercise*	2	2	Comp.				
mIsPractInflammationI-01a		Research Practical Focus area Inflammation I						
In which semester	Duration			Status	Admission requirements	Credit points/workload in hrs		
2nd semester	1 semester			Elec.-comp.	MolBio passed	6/ 180		
Component	Type of instruction	Contact hrs	CP	Status	Type of examination	Evaluation	Weight	
Block practical research – Lab 1	Practical*	3	3	Comp.	Lab book	graded		
Block practical research – Lab 2	Practical*	3	3	Comp.				
mIsOncologyI-01a		Focus area Oncology I						
In which semester	Duration			Status	Admission requirements	Credit points/workload in hrs		
2nd semester	1 semester			Elec.-comp.	MolBio passed	5/ 150		
Component	Type of instruction	Contact hrs	CP	Status	Type of examination	Evaluation	Weight	
Malignant diseases in humans - introduction	Lecture	2	1	Comp.	Written exam	graded		
	Seminar*	2	2	Comp.				
Practical disease research: Diagnostics	Practical exercise*	2	2	Comp.				
mIsPractOncologyI-01a		Research Practical Focus area Oncology I						
In which semester	Duration			Status	Admission requirements	Credit points/workload in hrs		
2nd semester	1 semester			Elec.-comp.	MolBio passed	6/ 180		
Component	Type of instruction	Contact hrs	CP	Status	Type of examination	Evaluation	Weight	
Block practical research – Lab 1	Practical*	3	3	Comp.	Lab book	graded		
Block practical research – Lab 2	Practical*	3	3	Comp.				

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mIsEvoMedi-01a		Focus Area Evolutionary Medicine I						
In which semester	Duration			Status	Admission requirements	Credit points/workload		
2nd semester	1 semester			Elec.-comp.	MolBio passed	5/150		
Component	Type of instruction	Contact hrs	CP	Status	Type of examination	Evaluation	Weight	
Evolutionary medicine - introduction	Lecture	2	1	Comp.	Written exam	graded		
	Seminar*	2	2	Comp.				
Practical disease research: Diagnostics	Practical exercise*	2	2	Comp.				
mIsPractEvoMedi-01a		Research Practical Focus Area Evolutionary Medicine I						
In which semester	Duration			Status	Admission requirements	Credit points/workload in hrs		
2nd semester	1 semester			Elec.-comp.	MolBio passed	6/ 180		
Component	Type of instruction	Contact hrs	CP	Status	Type of examination	Evaluation	Weight	
Block practical research – Lab 1	Practical	3	3	Comp.	Lab book	graded		
Block practical research – Lab 2	Practical	3	3	Comp.				

Focus areas II (continuation of area chosen in 2nd semester)

mIsInflammationII-01a		Focus area Inflammation II						
In which semester	Duration			Status	Admission requirements	Credit points/workload in hrs		
3rd semester	1 semester			Elec.-comp.	Inflammation I passed	11/ 330		
Component	Type of instruction	Contact hrs	CP	Status	Type of examination	Evaluation	Weight	
Clinical inflammation research: Project development	Practical course*	9	8	Comp.	Scientific essay + oral presentation (oral presentation in front of progr. committee)	graded		
	Seminar*	1	2	Comp.				
Current affairs (joint seminar)	Seminar*	1	1	Comp.				
mIsOncologyII-01a		Focus area Malignant diseases II						
In which semester	Duration			Status	Admission requirements	Credit points/workload in hrs		
3rd semester	1 semester			Elec.-comp.	Oncology I passed	11/ 330		
Component	Type of instruction	Contact hrs	CP	Status	Type of examination	Evaluation	Weight	
Malignant diseases in humans: Project development	Practical course*	9	8	Comp.	Scientific essay + oral presentation (oral presentation in front of progr. committee)	graded		
	Seminar*	1	2	Comp.				
Current affairs (joint seminar)	Seminar*	1	1	Comp.				

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mIsEvoMedII-01a		Focus area Evolutionary Medicine II						
In which semester	Duration			Status	Admission requirements	Credit points/workload in hrs		
3rd semester	1 semester			Elec.-comp.	Evolutionary Medicine I passed	11/ 330		
Component	Type of instruction	Contact hrs	CP	Status	Type of examination	Evaluation	Weight	
Evolutionary medicine: Project development	Practical course*	9	8	Comp.	Scientific essay + oral presentation (oral presentation in front of progr. committee)	graded		
	Seminar*	1	2	Comp.				
Current affairs (joint seminar)	Seminar*	1	1	Comp.				

Master's thesis 4th semester (carried out in focus area chosen)

MIsMASTER-01a		Preparation of Master's thesis						
In which semester	Duration			Status	Admission requirements	Credit points/workload in hrs		
4th semester	1 semester			Comp.	Scientific essay Focus Area II passed, all other modules concluded, 79 ECTS	30/ 900		
Component	Type of instruction	Contact hrs	CP	Status	Type of examination	Evaluation	Weight	
Master's thesis	Supervised research work	**	30	Comp.	Master's thesis	graded		

** depends on individual project and need for supervisors' input; supervisors are available for individual advice or set appointments.